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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BELANI, KISHIN G

ART UNIT	PAPER NUMBER
2109	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/672,777

Applicant(s)

FISHER ET AL.

Examiner

Kishin G. Belani

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/26/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement submitted on 09-26-2003 has been considered by the Examiner and made of record in the application file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 11 is rejected under 35 U.S.C. 102 (e) as being anticipated by **Bartz et al.** (U.S. Patent Publication # 6,701,342 B1).

Consider **claim 11**, Bartz et al. clearly show and disclose a method for assessing the impact of an indirectly implicated resource within an service level agreement (SLA) in real time (Fig. 6, block titled SLO1, referencing the impact of an indirectly implicated resource (for example an storage resource) to provide a throughput of 50 kb/sec or more; column 9, lines 30-67 and column 10, lines 1-11 that describe SLO1 and SLO2 as well as their impact on the SLA), the method comprising the steps of:

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establishing an SLA directly implicating a performance level for an underlying resource (Fig. 6, block titled SLO2, referencing the performance level for an underlying resource (for example server response time) to provide a response time less than or equal to 5 seconds; column 9, lines 30-67 and column 10, lines 1-11 that describe SLO1 and SLO2 as well as their impact on the SLA);

noting at least one resource upon which said underlying resource depends (resources affecting throughput);

receiving an event arising from said at least one resource (Fig. 6, SLO1 blocks 84 and 86 that cause an event of throughput falling below 50kb/sec for 5 minutes; column 9, lines 30-67 and column 10, lines 1-11 that describe SLO1 and SLO2 as well as their impact on the SLA);

determining whether said event affects said underlying resource in meeting said performance level (Fig. 6, SLA violated block 100, showing an analysis being done to determine the combined effect of SLO1 and SLO2 violations; column 9, lines 30-67 and column 10, lines 1-11 that describe SLO1 and SLO2 as well as their impact on the SLA); and,

if said event prevents said underlying resource from meeting said performance level, generating a notification specifying an impact of said event upon said SLA (Fig. 6, SLA violated block 104, showing a final determination of the SLA violation period; column 9, lines 30-67 and column 10, lines 1-11 that describe SLO1 and SLO2 as well as their impact on the SLA).

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 1, 3, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Main et al. (U.S. Patent Publication # 5,893,905)**, in view of **Bartz et al. (U.S. Patent Publication # 6,701,342 B1)**.

Consider **claim 1**, Main et al. clearly show and disclose a method for performing a real-time service level agreement (SLA) impact analysis (Abstract, that discloses the details of a method for performing a real-time service level agreement (SLA) impact analysis; Fig. 2 that depicts the setup for the method; column 3, lines 27-34 that disclose the same details listed in the abstract), the method comprising the steps of: detecting an event arising from a specific resource (Fig. 5, blocks 510, 512, 514, 516, 518, and 520 that disclose three different scenarios that trigger events arising out of failure of specific resources to meet SLA criteria; column 7, lines 37-40 that detail some of the causes that trigger events); determining whether based upon said event said specific resource cannot perform adequately to meet a term within an SLA which directly implicates said specific resource (column 8, lines 55-67 and column 9, lines 1-10 that disclose the details of the three failing scenarios mentioned above).

However, Main et al. does not explicitly disclose further determining whether based upon said event said specific resource inhibits another resource from performing adequately to meet a term within said SLA which does not directly implicate said specific resource, but directly implicates said another resource.

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In the same field of endeavor, Bartz et al. clearly show and disclose a method including the step of determining whether based upon said event said specific resource inhibits another resource from performing adequately to meet a term within said SLA which does not directly implicate said specific resource, but directly implicates said another resource (Fig. 6 showing an SLA violation caused by a combination of two separate events (throughput < 50 Kb/sec for 5 minutes and response time > 5 seconds for 2 minutes), wherein the server resource is unable to maintain the response time in part due to throughput from storage devices falling below the specified rate of 50 Kb/sec for 5 minutes; column 9, lines 30-67 and column 10, lines 1-12 that describe the scenario in more details; Fig. 2 that shows the hierarchical structure selected from service model disclosing interdependency of resources in an SLA).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the step of determining whether based upon said event said specific resource inhibits another resource from performing adequately to meet a term within said SLA which does not directly implicate said specific resource, but directly implicates said another resource, as taught by Bartz et al., in the method of Main et al., so that proper determination can be made for the root cause of SLA violation by analyzing the relationship between different resources.

Consider **claim 3**, and **as applied to claim 1 above**, Main et al. as modified by Bartz et al., clearly show and disclose a method for the claimed invention, including wherein said detecting event comprises the step of receiving an event from a

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management application charged with managing said specific resource (Fig. 2, Unicenter Star Console blocks 104A, 104B, and 104C; column 5, lines 28-31 which disclose that management application running on these consoles collect event information of jobs running on the mainframe production computers).

Consider **claim 8**, Main et al. clearly show and disclose a machine readable storage having stored thereon a computer program for performing a real-time service level agreement (SLA) impact analysis (claim 10; column 6, lines 38-58 that disclose a machine readable storage having stored thereon a computer program for performing a real-time service level agreement (SLA) impact analysis), the computer program comprising:

a routine set of instructions for causing the machine to perform the steps of detecting an event arising from a specific resource (Fig. 5, blocks 510, 512, 514, 516, 518, and 520 that disclose three different scenarios that trigger events arising out of failure of specific resources to meet SLA criteria; column 7, lines 37-40 that detail some of the causes that trigger events);

determining whether based upon said event said specific resource cannot perform adequately to meet a term within an SLA which directly implicates said specific resource (column 8, lines 55-67 and column 9, lines 1-10 that disclose the details of the three failing scenarios mentioned above).

However, Main et al. does not explicitly disclose further determining whether based upon said event said specific resource inhibits another resource from performing

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adequately to meet a term within said SLA which does not directly implicate said specific resource, but directly implicates said another resource.

In the same field of endeavor, Bartz et al. clearly show and disclose a machine readable storage having stored thereon a computer program for performing a real-time service level agreement (SLA) impact analysis including the step of determining whether based upon said event said specific resource inhibits another resource from performing adequately to meet a term within said SLA which does not directly implicate said specific resource, but directly implicates said another resource (claims 31 and 32; Fig. 6 showing an SLA violation caused by a combination of two separate events (throughput < 50 Kb/sec for 5 minutes and response time > 5 seconds for 2 minutes), wherein the server resource is unable to maintain the response time in part due to throughput from storage devices falling below the specified rate of 50 Kb/sec for 5 minutes; column 9, lines 30-67 and column 10, lines 1-12 that describe the scenario in more details; Fig. 2 that shows the hierarchical structure selected from service model disclosing interdependency of resources in an SLA).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide instructions for determining whether based upon said event said specific resource inhibits another resource from performing adequately to meet a term within said SLA which does not directly implicate said specific resource, but directly implicates said another resource, as taught by Bartz et al., in the instructions residing on a computer readable medium of Main et al., so that proper

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determination can be made for the root cause of SLA violation by analyzing the relationship between different resources.

Consider **claim 10**, and **as applied to claim 8 above**, Main et al., as modified by Bartz et al., clearly disclose a machine readable storage having stored thereon a computer program including receiving an event from a management application charged with managing said specific resource (claim 10; Fig. 2, Unicenter Star Console blocks 104A, 104B, and 104C; column 5, lines 28-31 which disclose that management application running on these consoles collect event information of jobs running on the mainframe production computers).

Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Main et al. (U.S. Patent Publication # 5,893,905)**, in view of **Bartz et al. (U.S. Patent Publication # 6,701,342 B1)**, and further in view of **Barkan et al. (U.S. Patent Publication # 6,925,493 B1)**.

Consider **claim 2**, and **as applied to claim 1 above**, Main et al., as modified by Bartz et al., clearly disclose a method of the claimed invention, including the step of establishing a hierarchy of resources within a shared database through which a relationship can be recognized between said specific resource and said another resource in said further determining step (column 4, lines 25-27 that disclose job dependencies and their required resource dependencies are entered into the

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maintenance workstation 108 and are stored in a databases in the production server 106).

However, Main et al., as modified by Bartz et al., do not explicitly show and disclose a shared database through which a relationship can be recognized between said specific resource and said another resource in said further determining step.

In the same field of endeavor, Barkan et al. clearly show and disclose a method including the step of establishing a hierarchy of resources within a shared database through which a relationship can be recognized between said specific resource and said another resource in said further determining step (Fig. 3 showing Infrastructure DB corresponding to the "Relationship DB 140", and Fig. 2 showing Infrastructure Manager 24 corresponding to "Relationship Management 120"; column 6, lines 25-31 which disclose that the Infrastructure Manager stores the information about the map of resources, i.e. what is the role of each resource, where it is connected, and which user/users are influenced by it, in the Infrastructure DB).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the step of establishing a hierarchy of resources within a shared database through which a relationship can be recognized between said specific resource and said another resource in said further determining step, as taught by Barkan et al., in the method of Main et al., as modified by Bartz et al., so that proper determination can be made for the root cause of SLA violation by analyzing the relationship between different resources.

Consider **claim 9**, and **as applied to claim 8 above**, Main et al., as modified by Bartz et al., disclose that the machine readable storage further comprising the step of establishing a hierarchy of resources within a shared database through which a relationship can be recognized between said specific resource and said another resource in said further determining step (column 4, lines 25-27 that disclose job dependencies and their required resource dependencies are entered into the maintenance workstation 108 and are stored in a databases in the production server 106).

However, Main et al., as modified by Bartz et al., do not explicitly show a shared database through which a relationship can be recognized between said specific resource and said another resource in said further determining step.

In the same field of endeavor, Barkan et al. clearly show and disclose that the machine readable storage further comprising the step of establishing a hierarchy of resources within a shared database through which a relationship can be recognized between said specific resource and said another resource in said further determining step-(claims 7-10; Fig. 3 showing Infrastructure DB corresponding to the "Relationship DB 140", and Fig. 2 showing Infrastructure Manager 24 corresponding to "Relationship Management 120"; column 6, lines 25-31 which disclose that the Infrastructure Manager stores the information about the map of resources, i.e. what is the role of each resource, where it is connected, and which user/users are influenced by it, in the Infrastructure DB).

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include software instructions for establishing a hierarchy of resources within a shared database through which a relationship can be recognized between said specific resource and said another resource in said further determining step, as taught by Barkan et al., in the method of Main et al., as modified by Bartz et al., so that proper determination can be made for the root cause of SLA violation by analyzing the relationship between different resources.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Main et al. (U.S. Patent Publication # 5,893,905)**, in view of **Barkan et al. (U.S. Patent Publication # 6,925,493 B1)**.

Consider **claim 4**, Main et al. clearly show and disclose a system for performing a real-time service level agreement (SLA) impact analysis (Abstract, that discloses the details of a system for performing a real-time service level agreement (SLA) impact analysis; Fig. 2 that depicts the system setup; column 3, lines 27-34 that disclose the same details listed in the abstract).

However, Main et al. do not explicitly show a service level manager programmed to establish a plurality of SLAs directly implicating selected resources; a relationship database configured for coupling to a plurality of management applications programmed to manage said selected resources; a modeling and evaluation system communicatively coupled to said relationship database and said service level manager and programmed

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to perform a real-time SLA impact analysis based both upon resources directly implicated by said SLAs and also upon resources which are related to said resources directly implicated by said SLAs.

In the same field of endeavor, Barkan et al. clearly show and disclose a system with a service level manager programmed to establish a plurality of SLAs directly implicating selected resources (Fig. 2, SLA Manager block 33, SLA DB block 32, and SLA Engine block 31; column 5, lines 21-34 that describe the function of each of these blocks);

a relationship database configured for coupling to a plurality of management applications programmed to manage said selected resources (Fig. 3, Infrastructure DB and Fig.2, Infrastructure Manager block 24; column 6, lines 25-31 which disclose that the Infrastructure Manager stores the information about the map of resources, i.e. what is the role of each resource, where it is connected, and which applications are influenced by it, in the Infrastructure DB);

a modeling and evaluation system communicatively coupled to said relationship database and said service level manager and programmed to perform a real-time SLA impact analysis based both upon resources directly implicated by said SLAs and also upon resources which are related to said resources directly implicated by said SLAs (Fig. 2, SLA Engine block 31 and CSL Engine block 28 together functioning as a modeling and evaluation system, communicatively coupled to said relationship database Infrastructure DB via Infrastructure Manager 24 and SLA Manager 33; column 5, lines 21-36 and column 6, lines 25-31 that disclose the details of these blocks).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a system with a service level manager programmed to establish a plurality of SLAs directly implicating selected resources; a relationship database configured for coupling to a plurality of management applications programmed to manage said selected resources; a modeling and evaluation system communicatively coupled to said relationship database and said service level manager and programmed to perform a real-time SLA impact analysis based both upon resources directly implicated by said SLAs and also upon resources which are related to said resources directly implicated by said SLAs, as taught by Barkan et al., in the method of Main et al., so that appropriate SLA impact analysis of the hierarchy of resources used by the service can be carried out, and the resources reallocated to avoid penalties associated with failure to meet SLA criteria.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Main et al. (U.S. Patent Publication # 5,893,905), in view of Barkan et al. (U.S. Patent Publication # 6,925,493 B1), and further in view of Dugan et al. (U.S. Patent Application Publication # 2002/0083166 A1).

Consider **claim 5**, and **as it applies to claim 4 above**, Main et al., as modified by Barkan et al., clearly show and disclose a system for performing a real-time service level agreement (SLA) impact analysis, except comprising a hierarchy of dependencies between said selected resources.

In the same field of endeavor, Dugan et al. clearly disclose a system comprising a hierarchy of dependencies between said selected resources (paragraph 0024 that describe a three-tier resource allocation hierarchy being balanced or adjusted to meet business rules).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a system comprising a hierarchy of dependencies between said selected resources, as taught by Dugan et al., in the method of Main et al., modified by Barkan et al., so that appropriate SLA impact analysis of the hierarchy of resources used by the service can be carried out, and the resources reallocated to avoid penalties associated with failure to meet SLA criteria.

Consider **claim 6**, and **as it applies to claim 5 above**, Main et al., as modified by Barkan et al., clearly show and disclose a system for performing a real-time service level agreement (SLA) impact analysis, except comprising a data warehouse coupled to said relationship database and configured to store said hierarchy.

In the same field of endeavor, Dugan et al. clearly show and disclose a system comprising a data warehouse coupled to said relationship database and configured to store said hierarchy (paragraph 0024 that describe a three-tier resource allocation hierarchy set up as objects and object instantiations; Fig. 3, IDNA node block 204, network management system 212; MOCE block 228, and Repository block 230, wherein the managed objects of resources with three levels of hierarchy are stored in the Repository block 230 corresponding to a claimed data warehouse).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a system comprising a data warehouse coupled to said relationship database and configured to store said hierarchy, as taught by Dugan et al., in the method of Main et al., as modified by Barkan et al., so that appropriate SLA impact analysis of the hierarchy of resources used by the service can be carried out, and the resources reallocated to avoid penalties associated with failure to meet SLA criteria.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Main et al. (U.S. Patent Publication # 5,893,905)**, in view of **Barkan et al. (U.S. Patent Publication # 6,925,493 B1)**, and further in view of **Bartz et al. (U.S. Patent Publication # 6,701,342 B1)**.

Consider **claim 7**, and **as it applies to claim 4 above**, Main et al., as modified by Barkan et al., clearly show and disclose a system for performing a real-time service level agreement (SLA) impact analysis, except wherein said modeling and evaluation system is disposed within said service level manager.

In the same field of endeavor, Bartz et al. clearly show and disclose a system wherein said modeling and evaluation system is disposed within said service level manager (Fig. 7, Service Model Manager block 101, Measurement Manager block 102, Baseline manager block 103, and Compliance Checker block 104 together forming said modeling and evaluation system, that is all part of DMS 1 (Diagnostic Measurement

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Server, interpreted by the examiner to include the Service Level Manager of the claimed invention); column 12, lines 63-67 and column 13, lines 1-8 that describe these components of DMS 1).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a system wherein said modeling and evaluation system is disposed within said service level manager, as taught by Bartz et al., in the method of Main et al., as modified by Barkan et al., so that a comprehensive set of tools is available to perform the SLA compliance evaluations.

Conclusion

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
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Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Kishin G. Belani whose telephone number is (571) 270-1768. The Examiner can normally be reached on Monday-Thursday from 6:30 am to 5:00 pm.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rafael Perez Gutierrez can be reached on (571) 270-1767 or (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Kishin G. Belani
K.G.B./kgb

May 22, 2007


RAFAEL PEREZ-GUTIERREZ
SUPERVISORY PATENT EXAMINER
5/22/07